WHAT IS CLAIMED IS:

1. A semiconductor process comprising:

providing an electroless plating bath container;

dissolving a nickel- or cobalt-containing material in water to form a solution having at least one of nickel and cobalt;

adding a first chelating agent to the solution, the first chelating agent having a first stability constant;

adding a second chelating agent to the solution, the second chelating agent having a second stability constant different from the first stability constant, the first chelating agent and the second chelating agent functioning to keep the at least one of nickel and cobalt suspended in the solution;

adding first and second pH adjusters to the solution to increase pH of the solution, the first and second pH adjusters having different compositions with different pH factors and functioning as buffering agents;

adding a diffusion barrier material to the solution;

adding at least one surfactant to the solution for enhancing uniformity of plating and chemically stabilizing the solution;

adding a boron-containing material to the solution to convert the at least one of nickel and cobalt in the nickel or cobalt-containing material to a solid form;

heating the solution to a predetermined temperature;

placing a semiconductor device having exposed metal into the electroless plating bath container;

plating the semiconductor device to form a barrier film overlying the exposed metal, the barrier film comprising a combination of boron, the diffusion barrier material and at least one of nickel and cobalt; and

removing the semiconductor device from the solution.

2. The process of claim 1 further comprising:

adding a citrate compound as the first chelating agent.

3. The process of claim 2 further comprising adding sodium citrate as the first chelating agent.

4. The process of claim 1 further comprising:
adding one of malic acid, tartrate, glycine and oxalic acid as the second chelating agent for stabilizing the solution and preferably chelating any dissolved metal.

5. The process of claim 1 wherein forming the exposed metal of the semiconductor device further comprises electroplating the exposed metal on the semiconductor device, planarizing a surface of the exposed metal and pre-cleaning the exposed metal.

6. The process of claim 1 further comprising using tungsten, chromium, molybdenum, rhenium and zirconium as the diffusion barrier material.

7. The process of claim 1 further comprising using copper as the exposed metal.

8. The process of claim 1 further comprising heating the solution to the predetermined temperature of substantially in a range of fifty degrees Centigrade to sixty degrees Centigrade.

9. The process of claim 1 wherein the nickel- or cobalt-containing material further comprises one of cobalt chloride and cobalt sulfate.

10. The process of claim 1 further comprising adding a first surfactant and a second surfactant having different stabilization parameters than the first surfactant.

11. The process of claim 10 further comprising implementing the first surfactant as a fluoroalkyl alcohol substituted polyethylene glycol and implementing the second surfactant as one of alkoxylated amines and polyglycol.

12. In a process for a semiconductor, a process composition for electroless plating of a film of diffusion barrier material onto copper comprising:
a cobalt-containing compound;
a first chelating agent for preferentially chelating the cobalt;

a second chelating agent which is different from the first chelating agent and which preferentially chelates any dissolved metal in the composition;

a first pH adjuster for buffering the composition and adjusting the pH of the composition by a predetermined amount;

a tungsten-containing compound to provide a first metallic source;

a first surfactant having a first surface tension reducing characteristic, the first surfactant enhancing an amount of tungsten deposition in the film of diffusion barrier material; and

a second surfactant having a second surface tension reducing characteristic, the second surfactant improving uniformity of deposition of the film of diffusion barrier material.

13. In the process of claim 12 wherein the compound further comprises:

a boron-containing compound to provide a boron source to function as a reducing agent.

14. In the process of claim 13 wherein

the cobalt-containing compound comprises cobalt sulfate hepta hydrate and is approximately 27 to 35 grams per liter of compound;

the first chelating agent comprises one of tri-sodium citrate in approximately 27 to 35 grams per liter of compound or citric acid in approximately 25 to 30 grams per liter;

the second chelating agent comprises malic acid and is approximately 27 to 35 grams per liter of compound;

the first pH adjuster comprises tetramethyl ammonium hydroxide (TMAH) and is approximately 1.0 percent to 1.5 percent of compound;

the second pH adjuster comprises potassium hydroxide in an amount required to bring the pH of the composition to the predetermined pH;

the tungsten-containing compound comprises one of sodium tungstate dihydrate in approximately 8 to 12 grams per liter of compound or tungstic acid in approximately 6 to 10 grams per liter of compound;

the first surfactant comprises approximately 15 to 40 parts per million (ppm) of compound;

the second surfactant comprises approximately 20 to 100 parts per million (ppm) of compound; and

the boron-containing compound comprises morpholine borane and is approximately 5 to 8 grams per liter of compound.

15. In the process of claim 12 wherein the first chelating agent comprises a citrate compound and the second chelating agent comprises one of malic acid, tartrate, glycine and oxalic acid.

16. In the process of claim 12 wherein the compound further comprises:

a second pH adjuster for further buffering the composition and further adjusting the pH of the composition to have a predetermined pH.

17. In the process of claim 14 wherein the predetermined pH is in a range from approximately 9.0 through 10.0.

18. A semiconductor process solution for use in electroless plating of a film of diffusion barrier material onto copper comprising:

a compound containing a metal;

a first chelating agent for preferentially chelating the metal;

a second chelating agent which is different from the first chelating agent and which preferentially chelates any other metal in the composition;

a first pH adjuster for buffering the composition and adjusting the pH of the composition by a predetermined amount;

a tungsten-containing compound to provide a first metallic source;

a first surfactant having a first surface tension reducing characteristic, the first surfactant enhancing an amount of tungsten deposition in the film of diffusion barrier material; and

a second surfactant having a second surface tension reducing characteristic, the second surfactant improving uniformity of deposition of the film of diffusion barrier material.

19. The semiconductor process solution of claim 18 wherein the metal further comprises at least one of cobalt and nickel.

20. The semiconductor process solution of claim 18 further comprises:

a boron-containing compound to provide a boron source to function as a reducing agent.